Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 110 (2014) 755 – 766

Procedia
Social and Behavioral Sciences

Contemporary Issues in Business, Management and Education 2013

The market potential assessment model for private pension savings

Ilja Arefjevs [a]*, Marija Lindemane[a]

[a] *BA School of Business and Finance, K. Valdemara str.161, Riga, Latvia*

Abstract

The aim of the report is to develop the market potential assessment model for private pension savings to assist financial companies in strategic decision making in a specific marketplace. The market growth, saturation and competition model is developed for the markets of Finland, Estonia, Latvia, Lithuania and Poland for the time period 2000–2012. Commonly used insurance metrics like density and penetration transformed into market based factors describing the strength of market growth and premium-to-salary market saturation. Additional market growth and saturation factors and state of competition added to the model. Methods used in the empirical part are econometric analysis, including analysis of regression, as well as economic analysis, including main trend analysis, development indicators, relative and absolute indicators and other methods. The research outcome is a cross-country comparison of market growth, saturation and competition to support strategic decisions by financial companies operating in the private pension saving market.

Keywords: market potential; strategic decisions; financial companies; pension funds; life insurance.

1. Introduction

The assessment of market potential is pivotal in supporting strategic decisions of financial companies regarding expansion of business outside domestic market. It should address a number of questions to be answered while market growth, saturation and competition of a given industry in target country being one of the most important. Fair evaluation of demand growth, saturation in the financial services and competition in the marketplace provides a ground for consideration of business expansion decisions as well as insights to choosing the appropriate market entry strategy. Despite the fact that financial services companies offer a wide variety of similar financial products,

* Corresponding author. Tel.: +371-265-470-36.
E-mail address: ilja.arefjevs@inbox.lv

doi:10.1016/j.sbspro.2013.12.920

such assessment even of highly standardized ones constitutes a challenging tasks because of such products being intangible compared to ordinary goods. Lack of dedicated methodology to measure growth and saturation of the financial services market provoked authors to develop a new innovative approach by elaborating methodology previously used to mainly for other purposes. Authors elaborated such common insurance indicators as *penetration* and *density* to enable the market potential assessment. The approach is employed for two groups of close financial products, which differ in terms of their providers – either a life insurance company or a private pension fund. The given financial products are commonly referred to as *private pension savings products*.

As the research object is chosen private pension savings industry in Baltic region countries – Estonia, Latvia, Lithuania, which possess immature markets, Poland as well as Finland, which can be qualified as rather mature markets. The research is conventionally divided into three parts, each of which constituting certain task to be consistently solved with a purpose of achieving the research objective – performing an assessment of the industry market potential:

- defining theoretical framework for factors affecting strategic decisions on expansions and in a particular case demand growth, saturation and competition as a supply side indicator, which can be used to assess the market potential in a country subject to market entry;
- theoretical reasoning using specific indicators to define the market growth, saturation and state of competition in case of private pension savings products;
- defining market growth, saturation and competition indicators and their dynamics in the private pension savings products of the given countries and developing cross-country comparison of the market potential based on these findings to support strategic decisions by financial companies.

Methods used in the empirical part of the report are econometric analysis, including analysis of regression, as well as economic analysis, including main trend analysis, development indicators, relative and absolute indicators and other methods.

2. Expansion of financial companies and factors affecting such strategic decisions

Extensive argumentation in favour of financial companies to expand their operations overseas is presented in the literature on the subject. Javidan and House (2002) argued that the problem of expansion by financial companies overseas evolved along with the increasing saturation in domestic markets. Corporations started to face increasingly global business environment also because of lucrative growth opportunities in foreign markets. The vast majority of such opportunities emerged in fast growing economies. For example, Mollet (2004) concluded that China becoming a member of the World Trade Organization in 2001 triggered a series of expansion activities by financial companies. According to the research by the Financial Express (2010), India is considered to be another main overseas spot for foreign financial companies. Banks including Credit Suisse, Goldman Sachs, Morgan Stanley, ICBC and National Bank of Australia lined up to entry the Indian financial services market. Banincova (2012) came to the conclusion that since late 1990 and between 2000–2005 Central and Eastern Europe countries, including three Baltic States, also recorded increased inflows of foreign direct investments in the financial sector. According to the research by the European Central Bank (2005), many of these banks considered this strategically important region to be their first step towards expansion to such countries of Eastern Europe like Ukraine and Russia. Recent study by the European Investment Bank (2013) reveals that foreign banks operating in Eastern Europe and Turkey expect a pickup of credit demand, continued tight international supply conditions and somewhat easier domestic supply conditions. Ferguson (2008) summarized above-mentioned findings and concluded that the financial services industry is the one having a long history, being already mature and thus facing a need for continuous expansion to grow.

Authors agree with the above mentioned opinions and believe that strategic actions in relation to the entry to new markets of financial services should be accompanied by the detailed assessment of indicators capturing the market potential.

Using market growth as a proxy for market attractiveness, Brouthers (2002) argues that market growth appears to be an important determinant of how resources can be committed in a country. The authors consider that clarification regarding what is understood by “market growth” is needed. The need to base targeting decisions on consumer – product –based rather than national market characteristics had been recognized and stressed long time before newer

interest in the cross- national approaches at the core of international market segmentation (e.g. Cavusgil, 1985; Papadopolous, 1987).

The notion of market potential as the most important stimulus of market entry receives strong support from researchers Nordstrom (1991), Yoshida (1987), Terpstra and Yu (1988), Morschett, Klein and Swoboda (2010). Russow and Okoroafo (1996) also found market potential (size and growth) to be an important determinant of market entry. Literature review conducted by authors revealed that there are a number of different market potential factors influencing strategic decisions regarding business expansion outside national markets. For instance, the review of Whitelock and Jobber (2004) highlighted five external factors that had high potential in explaining the decision to enter a new, non- domestic market for the first time: (1) the country environment; (2) psychic (or geographical) distance; (3) market based factors; (4) competition and (5) information and market knowledge.

Financial services market potential can be defined in various ways. Enz (2000) used a common approach to define the market potential for insurance products by linking insurance premiums to the gross domestic product (GDP) by assuming certain function of income elasticity of demand. That provides a model for insurance penetration depending on a GDP per capita. In the more extensive research of 63 countries of the world, Beck and Webb (2002) found that life insurance penetration and density increase with the income level while the demand elasticity is not being constant. Afterwards, Sinha (2005) on the example of India, China, Brazil, Argentina, Turkey, Mexico, South Korea and Taiwan proved that the relation between growth in income and demand for insurance is S-shaped. Liao *et al.* (2009) argues that competitive advantage and thus a consequent expansion in the insurance market can be also obtained by designing products to meet opportunities derived from advanced understanding of customer demand. Kjosevski (2010) along with other researchers attempted to measure a demand for life insurance by using common insurance metrics like penetration and density for the sample of 14 countries in Central and South- Eastern Europe. Kjosevski (2010) came to the conclusion, that given Central and Southern and Eastern European countries constitute a highly potential region with dynamic and fast-growing insurance markets. However, common metrics like insurance penetration and density and thus researches mentioned above tend to provide findings which contribute to rather social and demographic economics studies. The strategic decision perspective of market growth and saturation as a proxy to the market potential may need different key indicators as input variables and therefore a new framework is to be developed. Furthermore apart from the so-called market based factors, authors revisit the competition as an additional dimension to be considered in such decision making.

3. Theoretical framework of the research

Market potential problem is very complex and thus can be viewed from several perspectives. For example, geographic concentration of economic activities is widely used. Harris (1954) developed the market-potential function, which states that the demand for goods produced in a location is the sum of purchasing power in other locations weighted by transport costs. Fujita *et al.* (1999) reinvigorated the market-potential concept by showing how it can be derived from formal spatial models. Some literature examines whether production or exports tend to concentrate near large national or regional markets, as would be consistent with Krugman's (1980) home-market effect. Other studies try to identify whether incomes are higher in countries or regions with access to larger markets for their goods, as would be consistent with recent economic geography models (Hanson, 1996; Redding and Venables, 2004; Head and Mayer, 2004). However, authors believe that these approaches are too broad to be used for specific financial products like private pension savings. Therefore authors chose the Törnquist (1941) approach as a basis for development their own product level approach to the market potential assessment problem for the given products. The Törnquist (1941) approach provides the hyperbolic shape function for studying demand for various goods in relation to their price and importance in the consumption basket. Defining the form of each product group's functional dependence on the average income level provides valuable insights into consumers' perception of various types of goods and allows more precise modelling of consumer behaviour in solving the problems of determining market saturation (Fisk, 1958). For so far, this approach has been focused mainly on the commodity (or goods) market (Kubicova, Lušňakova, 2010, Saegusa, 1960; Niitamo, 1968). Authors propose certain market growth parameters leading to the saturation to be analyzed in the context of the average income of population for the purpose of the current research.

The market growth, saturation and competition approach is developed to establish a model for assessment of the market potential for certain financial product or service, which can be used as one of considerations in well-

grounded strategic decision making by financial companies. First, it is necessary to reveal whether there is a pattern of relationship between average salary in a specific country and aggregate volume of a specific life and pension product consumed. Second, the total market growth has to be split into speed of market growth and strength of market growth.

(a) *Speed of market growth* is defined as an increase in a number of customers of private pension funds or ones with life insurance in the given market over a chosen time period provided a given increase in the average salary.

(b) *Strength of market growth* is defined as an average contribution to private pension funds or life insurance premia in the given market over chosen time period provided the speed of market growth. Conventionally, increasing average contribution or life premium along with the market growth speed would mean positive dynamics while decreasing average indicator will demonstrate negative market growth dynamics. The strength of market growth can be seen as an *adjusted density* (i.e. insurance density is normally defined as an average insurance premium per capita).

The next step of the approach is supposed to define saturation indicators, which signal about a pace of market saturation and can be used to support long-term strategic decisions. Similarly to previously mentioned indicators, these ones are also customer and premium or contribution assessment oriented:

(a) *Premium-to-salary market saturation* is defined as a weight of a contribution or premium in an average salary of a country. The premium-to-salary market saturation can be seen as an *adjusted penetration* (i.e. insurance penetration is normally defined as percentage of total insurance premia in the gross domestic product).

(b) *Customers-to-active population market saturation* is defined as a weight of a number of life or pension customers in the active population of a given country.

Dynamics of these indicators are subject to analysis in terms of their nature of change during the given period of time. Mature markets, which do not exhibit growth patterns as can be identified by the steps explained above, may require a further split into single products, which, most likely, will be in different stages of their life cycle, and should be separately analyzed from the product growth and saturation perspective.

Competition among market participants in a specific market place is also very important. While market saturation reveals the state of the demand side of the market, extent of competition is a sound indicator of the supply side of the market. Competition is measured by the Herfindahl-Hirschman index (*further in the text- HHI*),

$$HHI = \sum_{i=1}^{N} Si^2 \tag{1}$$

which is defined as the sum of the squares of the market shares (S) of market participants (N).

The three dimensional model for the market growth, saturation and competition is further employed in the empirical part of the paper to present findings. In accordance with the logic of the model, positive dynamics of all indicators send a signal about favourable environment for the strategic decision about market entry or expansion. Conversely, negative dynamics of all indicators normally would signal about negative environment for such a decision. Mixed dynamics require a more thorough analysis of all important considerations. Result interpretation is shown in Table 1.

Further practical research is intended to confirm the applicability of the above-described analytical approach for determining the market potential of the two previously mentioned financial products.

4. Analysis and result discussion

Several Baltic region countries have been chosen for the research – Finland, Estonia, Latvia, Lithuania and Poland. Estonia, Latvia and Lithuania, being politically, economically and financially closely linked to each other, experienced a very rapid growth in 2000–2007, which was followed by a sharp contraction period afterwards and return to growth in recent years. Meanwhile Poland was the only EU country, which managed to avoid a technical recession during the recent financial crisis. Finland, being the only developed country studied in this research, experienced a major fall in its national output and unemployment increase during the crisis of 2007–2009. According to Insurance Europe (2013), Baltic countries possess one of the lowest insurance densities in Europe

Table 1. Dynamics of market growth, saturation and competition: result interpretation

Indicators	Dynamics of market growth		ndicators	Dynamics of market saturation		Dynamics of competition
Speed↑ Strength↑	Positive	Favourable environment for entering or expansion in the market.	Premium/ salary↑ Customers/population↑	Positive	Product is in the growth stage, which lays out favourable foundation for the market share expansion.	Competition is going down, i.e. the value of the HHI is demonstrating positive dynamics.
Speed↑ Strength↓ or Speed↓ Strength↑	Mixed	The strategic decision making will require a more detailed analysis of each of the parameters. The *speed* is of higher importance in taking decision regarding the market expansion compared to the *strength*. The rationale for this implication comprises a number of reasons while the pivotal one is that customer acquisition costs are generally lower in the growing market in terms of customers in contrast to a mature market where the growth can be rather achieved at the account of increasing customer contributions.	Premium/ salary ↑ Customers/ population↓ or Premium/ salary ↓ Customers/ population ↑	Mixed	Products growth stage is over. However, in order to find out reasons, a deep analysis of parameters has to be performed. For instance, a decrease of the relative weigh of premium or contribution in an average salary, along with the growth in a number of customers can signal about relative unsaturation of the market due to the fact that there are still some unreached niches of potential customers. Vice versa, a growing proportion of premium or contribution in an average salary along with the decreasing number of customers can signal about an impact of a crisis on the product, for example.	Competition can go up, down or stay unchanged. Primary are market growth and saturation indicators.
Speed↓ Strength↓	Negative	Not favourable environment for entering or expansion in the market.	Premium/ salary ↓ Customers/ population ↓	Negative	Negative environment for strategic decisions to enter or expand in such a market environment. Thorough assessment of relevant additional factors impacting the given environment (inc. legislation, competition, tax regime, cultural perception etc.) is needed.	Competition is going up, i.e. HHI value is demonstrating negative dynamics.

Compiled by the authors.

while Poland enjoys one the highest life insurance densities in Eastern Europe. Finland is considered to possess a very high insurance density. Detailed information on research periods and products in the selected countries is provided in the Table 2:

Table 2. Countries, products and time periods of the research

Country	Research period	
	Pension 3rd Pillar	Life Insurance
Finland	Product n.a.	2000–2012
Estonia	2003–2012	2001–2012
Latvia	2000–2012	2000–2012
Lithuania	2004–2012	2008–2012
Poland	Data n.a.*	2003–2012

Compiled by the authors.

The main limitation of the report is a lack of certain statistical data valid for the research and national specifics of product offerings in the given countries. Specifically, it was not possible to obtain total numbers of life insurance customers in Finland and Latvia. Also, it was not possible for Poland to separate life products with pure risk for the analysis purposes because life products with pure risks are not directly comparable to savings-driven private pension savings products. Additionally, separation of capital redemption products would also add value to the report because customers-to-population proportion takes into account only active population while capital redemption products are vastly used by retirees. The private pension savings market of the countries of the research, as expressed in annual gross written life premia and pension contributions, is shown on the Table 3.

Table 3. Private Pension Savings Market in Finland, Estonia, Latvia, Lithuania and Poland for the time period 2000–2012 (EUR mio)

Market/Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
LV P3P	2	5	6	7	8	12	20	28	35	25	22	26	30
LV Life	7	6	8	11	9	15	27	68	51	51	60	58	60
EE Life	0	21	26	34	48	77	94	116	27	41	42	32	39
EE P3P	NA	NA	NA	NA	NA	NA	NA	NA	20	13	11	11	12
LT Life	NA	NA	NA	NA	NA	NA	NA	NA	111	100	117	123	126
LT P3P	NA	NA	NA	NA	1	5	9	9	3	2	4	4	4
PL Life	NA	NA	NA	2540	2808	3805	5417	6741	11085	6997	7865	7717	8693
FI Life	3450	2900	3300	2900	2900	3200	3100	2800	2600	3100	4787	3300	3851

Source: own calculations based on Financial and Capital Markets Commission, Latvian Insurers Association, Bank of Lithuania, Financial Supervision Authority, SEB Wealth Management, Swedbank Investeerimisfondid AS, UAB DNB Asset Management, Finasta Asset Management, Federation of Finnish Financial Services, Polish Insurance Association.

Poland stands out with the biggest market in absolute terms with annual life volume exceeding eight billion euro. Finland occupies the second position with life premia nearly reaching four billion euro. Out of Baltic countries, Lithuania enjoys the biggest market with its annual life contributions exceeding 120 million euro. Estonian life market demonstrated outstanding performance in 2007, when its annual life premia reached 116 million of euro. However, in contrast to the Lithuanian life market, these results have not been sustained. Latvia in turn can be proud of having the most harmonized market in terms of the least difference between annual life premia and pension contributions, while its total market of private pension savings products still lagging behind Lithuania but being ahead of Estonia.

4.1. Empirical evidence for demand of private pension savings products and average salary

The approach by authors suggests revealing the relationship between income and total demand for the product. Empirical findings suggest that for Latvia and Poland there was a linear relationship found between the average salary in the country and total amount of pension 3rd pillar contributions and life insurance premia, which are summarized in the Table 4.

Table 4. Statistical findings for linear relationship between income and total demand for private pension savings products (EUR mio)

Product	Parameter	Latvia	Poland
Life Insurance	Intercept	-22.046879	- 7 212.1
	Slope	0.12125	19.475
	Adj. R-squared	0.89	0.89
Private Pension Funds	Intercept	-7.587539	
	Slope	0.054954	Data n.a.
	Adj. R-squared	0.92	

Compiled by the authors.

The findings clearly illustrate that demand for life insurance in Latvia is more than twice salary-sensitive than pension 3rd pillar. An incremental change of one euro in the average salary will cause the whole market to change by 55 thousand euro in case of pension 3rd pillar and 121 thousand euro in case of life insurance. In Poland, which is a much bigger and mature market, an incremental change of one euro in the average salary will cause a total change in the whole market of 19.5 million euro. Thus, it is possible work out forecasts for developments in Latvian and Polish markets of life and pension products provided that salary estimates are available. Such forecasts can be used in the first stage of assessing the market growth potential in order to make a strategic decision about the entry to the market.

4.2. Speed and strength of market growth for private pension savings products

Despite country specific differences, for all three Baltic countries there is a strong correlation found between a number of persons involved in private life and pension savings and the average salary, which lays out a sound foundation for measuring the speed of market growth for different products in different countries. Findings are summarized in the Table 5:

Table 5. Statistical findings for relationship between income and a number of customers of private pension savings products

Product	Parameter	Latvia	Lithuania	Estonia
Life Insurance	Intercept	Data n.a.*	Data n.a.*	769
	Slope			335.24
	Adj. R-squared			0.83
Private Pension Funds	Intercept	-32 738	-12 011	-50 577
	Slope	221.65	57.33	127.28
	Adj. R-squared	0.94	0.78	0.98

Compiled by the authors. *Data are not available for at least eight years to run an OLS regression analysis.

The findings suggest that one euro increase in an average salary will add 222 new active customers to pension 3rd pillar funds in Latvia. If compared to Estonia, one euro salary change will cause a 75% bigger impact on a number of pension 3rd pillar fund participants in Latvia than in Estonia. However, when compared to the number of life insurance customers depending on salary in Estonia, it is obvious that a total number of life customers is around 2,6 times more salary sensitive than a number of pension 3rd pillar participants in Estonia and around 50% more salary sensitive than a number of active pension 3rd pillar fund participants in Latvia. In Lithuania there is very minor pension 3rd pillar demand sensitivity as measured to salary because one additional euro creates only 54 new pension 3rd pillar customers. Life market in Poland did not demonstrate similar relationship between income and a number of customers. Moreover, the number of life customers in Poland in the given time period from 2003 till 2012 exhibits only volatility (i.e. maximum drop from the period average is 13% while maximum increase is 8%) and does not demonstrate growth trends. Thus the market is assumed to have non-existent growth in the context of the given model.

Finland can be seen as a special case because a total number of life customers is not available. However, it is possible to analyse the market growth dynamics of a single product- pension insurance. Statistical findings on the Finnish pension insurance are summarized in the Table 6.

Table 6. Statistical findings for a relationship between income and a number of customers of pension insurance in Finland

Product	Parameter	Value
Pension Insurance	Intercept	-522 042
	Slope	434.51
	Adj. R-squared	0.95

Compiled by the authors.

However, to define the strength of market growth or adjusted density, it is necessary to analyze the development of an average life premium or pension fund contribution both in absolute terms provided the increase in a number of customers. The average contribution or premium for all studied products reveals neither increasing nor decreasing pattern except a life product in Poland and pension insurance in Finland. Particularly, there is a strong positive relationship revealed between an average life or pension contribution and average salary (adjusted R-squared is 0.91) in Poland for the time period from 2003 till 2012 while the number of customers staying nearly flat. Meanwhile in case of the fast-growing Finnish pension insurance there is a strong negative correlation between a number of customers and average premium (adjusted R-squared is 0.97) where an increase of one thousand customers causes a drop in an average contribution of 2.16 euro.

4.3. Customers-to-population and adjusted penetration ratios as market saturation indicators

A proportion of private pension savings customers to the active population in each country indicate the market saturation from customers' perspective, as summarized in the Table 7.

Table 7. Proportion of private pension savings customers to the active population in a country

Year	LV P3P	EE Life	EE P3P	LT Life	LT P3P	PL Life	FI Pens. Insurance
2008	0,10	0,33	0,07	0,22	0,01	0,54	0,28
2009	0,10	0,46	0,08	0,19	0,01	0,48	0,29
2010	0,08	0,45	0,08	0,20	0,01	0,52	0,30
2011	0,09	0,49	0,09	0,24	0,01	0,50	0,30
2012	0,10	0,48	0,08	0,24	0,02	0,47	0,31

Source: own calculations based on World Databank and sources, mentioned under Table 3.

The indicator is increasing for pension savings products in Lithuania and pension insurance in Finland while staying volatile for other countries. To sum up the analysis of the market saturation from the customers perspective, life insurance in Estonia is found to possess the highest market saturation in Baltic countries, which is followed by Poland. Even though the life market of Poland in terms of a number of customers is considered to be already mature where absolute speed of saturation is nearly zero or can be even negative. Pension 3rd pillar funds in Lithuania are obtained the lowest score.

Regarding the premium-to-income market saturation (i.e. adjusted penetration) measured as a proportion of annual life premium or pension contribution in the average salary, nearly for all products there are no clear growth or dilution patterns for the time period of 2008 to 2012 except Finland and pension funds in Estonia, where such a proportion is steadily coming down. Findings are summarized in the Table 8.

Table 8. Proportion of an average private pension savings contribution to the average monthly salary in a country

Year	LV P3P	EE Life	EE P3P	LT Life	LT P3P	PL Life	FI Pens. Insurance
2008	0,5	0,14	0,45	0,44	0,283	1,26	0,36
2009	0,35	0,16	0,31	0,49	0,185	0,84	0,33
2010	0,36	0,17	0,27	0,55	0,295	0,83	0,29
2011	0,38	0,13	0,27	0,52	0,263	0,79	0,26
2012	0,39	0,15	0,27	0,51	0,232	0,91	0,23

Source: own calculations based on World Databank and sources, mentioned under Table 3.

4.4. Competition indicators defined as HHI

Competition is measured by the Herfindahl-Hirschman index, which is defined as the sum of the squares of the market shares of market participants. It is obvious that states of competition vary from market to market in countries of the research. Findings are provided in the Table 9.

Table 9. Herfindahl-Hirschman indices calculated for the given markets of the countries under research

Year	LV P3P	EE Life	EE P3P	LT Life	LT P3P	PL Life	FI Pens. Insurance
2011	2 851	2 594	2 690	1 572	3 195	1 303	2 204
2012	2 768	2 598	2 274	1 547	3 509	1 281	2 371

Source: own calculations based on World Databank and sources, mentioned under Table 3.

The highest competition is observed in the Polish life market (HHI=1281) while the lowest is in the Lithuanian pension 3rd pillar market (HHI=3509). The above-described market growth, saturation and competition findings are included in the detailed model for the assessment of market growth, saturation and competition dynamics for private pension savings products in Baltic region countries for the past time period from 2010 to 2012 and as a forecast of the market growth, saturation and competition for the future time period from 2013 till 2015 and provided in the Fig. 1. The market growth, saturation and competition model for the period from 2010 till 2012 reveals that the life market of Poland was the most saturated (or mature) and less dynamic in all considered dimensions. Particularly, it did not experience a net customer increase, it had the highest average premium in absolute terms as well as Polish customers were investing the biggest share of their wallet into life insurance while the proportion of customers having life insurance to the whole active population was marginally lagging behind Estonian life numbers. As a matter of fact, all other markets except Lithuanian life and Finnish pension insurance, dropped in terms of a net increase of customers. To summarize findings of the model for the time period from 2010 till 2012, this was a difficult time in terms of a number of customers for a majority of products. It explains quite well why the total volumes on the Table 3 stayed nearly flat for this time period, indicating a strategic challenge to take a decision to enter or expand in the markets in the given time periods. The same model was constructed for the time period of the year 2013 till 2015. The core salary assumptions are an annual increase of 3% for Estonia, Latvia and Lithuania and 1% increase for Finland and Poland. Assumptions are made rather for the purpose of the model illustration and do not necessarily precisely reflect economic fundamentals.

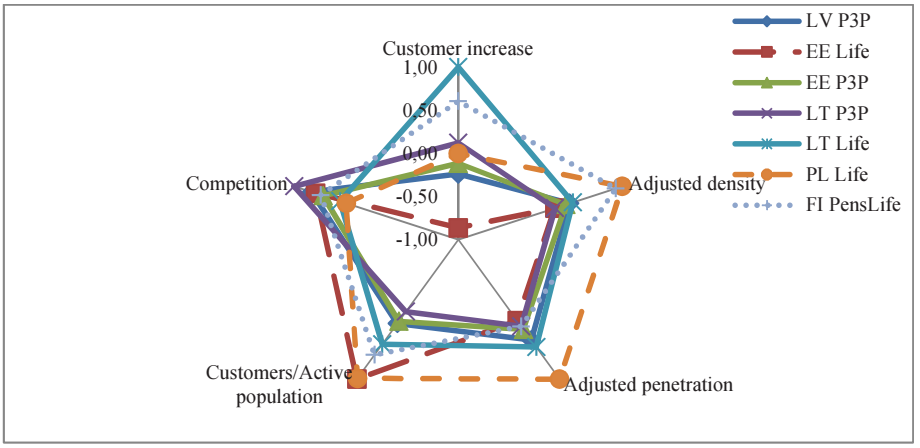

Fig. 1. Market growth, saturation and competition of the private pension savings market of Estonia, Latvia, Lithuania, Poland and Finland (2010–2012). Compiled by the authors

The speed of market growth in terms of a net customer increase was estimated by using the ordinary least square regressions when possible and assuming average trend indicators when the liner regression did not provide strong explanatory power (adjusted R-squared at least 0.78). The customers-to-population market saturation, stated as a proportion of customers with private pension savings products to active population of country was estimated by assuming average indicators. The strength of market growth, measured as an adjusted density (i.e. average contribution or premium), was estimated by assuming average indicators except Poland and Finland, where linear regressions hold. The adjusted penetration (i.e. premium-to-income market saturation) measured as a proportion of an average premium or contribution to an average salary was estimated by assuming average indicators except Finland where a linear regression holds. The findings are visualized in the detailed model for the time period of 2013–2015 of the Fig. 2.

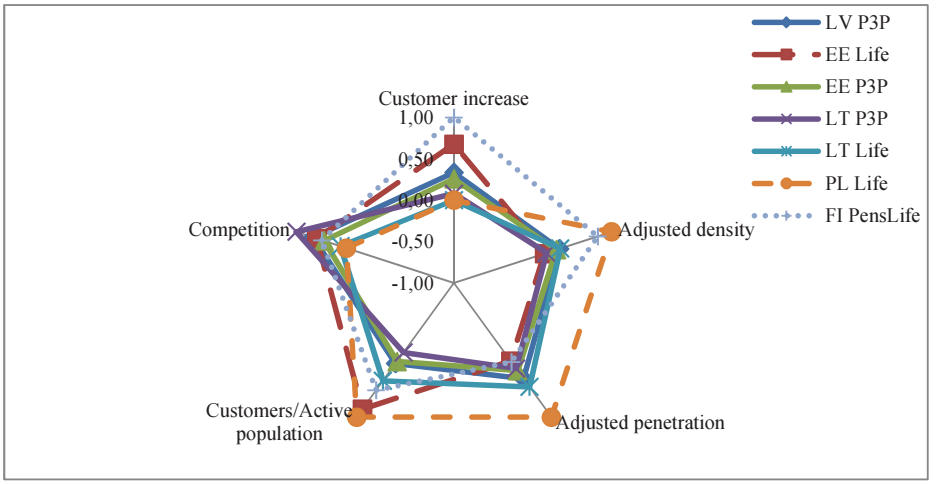

Fig. 2. Market growth, saturation and competition of the private pension savings market of Estonia, Latvia, Lithuania, Poland and Finland for the time period 2013–2015. Compiled by the authors

The model suggests that the life market potential in Poland will be the most difficult to capture in terms of a number of new customers, which is estimated to be non-existent. The market itself is considered to be quite saturated (i.e. customers-to-active population proportion is 0.5) and its growth potential might come from an

increase in an average premium, which is both at the highest relative (i.e. 0.91 out of average monthly salary) and absolute level though (euro 867 per annum). Finally, there is the fiercest competition in the life market of Poland. On the opposite side, the Finnish pension insurance market is expected to show the highest increase in the net number of customers (i.e. 42 th), followed by the Estonian life market (i.e. 28.5 th). The model also says that the Estonian life market has a potential for additional growth in both the average contribution in absolute terms (i.e. euro 130 per annum) and also as a proportion of an average monthly salary (i.e. 0.15). However, its further increase in terms of a number of new customers can be limited because it is already approaching saturation level of Poland (i.e. 0.44 for EE Life vs. 0.50 for PL Life). Meanwhile competition in the Estonian life market is quite favourable to new entrants because of the high concentration. Latvian private pension funds in terms of the market potential should be marginally preferred to Estonian pension funds while Lithuanian pension 3rd pillar funds are estimated to demonstrate the least market growth (i.e. 3.2 th of new customers and no major changes in other indicators) in 2013–2015, which can be a good option for a very long-term strategic investment. Findings are also presented on the concept model on the Fig. 3.

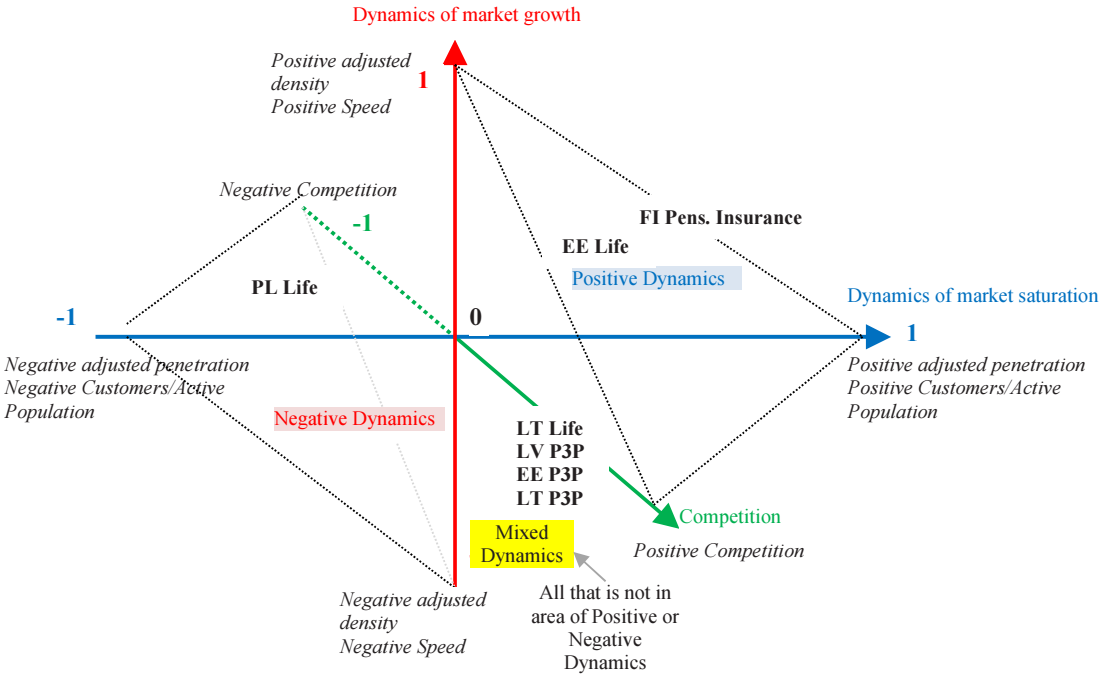

Fig. 3. The concept 3D model for assessment of market growth, saturation and competition dynamics for the private pension savings market of Estonia, Latvia, Lithuania, Poland and Finland (2013–2015). Compiled by the authors

Conclusions

The market growth, saturation and competition indicators as well as their dynamics have to be thoroughly assessed in strategic decision making by companies, including financial ones but not limited to, in relation to market entry and expansion issues. The current practice most often suggests using insurance penetration and density indicators to compare the level of saturation in different insurance markets, which can be further explained by a regression built up from a number of relevant economic variables. The drawback of such indicators and their constituting variables is social-economic anchoring and thus relatively weak contribution to the strategic business decision area. Authors propose to eliminate this drawback by certain adjustments of these indicators. Authors propose to use an average pension contribution or life premium as an indicator of strength, which can be seen as an adjusted density, and a customer increase as an indicator for speed of growth in the private pension savings market.

Market saturation is defined by the premium-to-salary proportion, which can be seen as an adjusted penetration, and by the customers-to-population proportion. Dynamics of these indicators are subject to analysis in terms of their nature of change during the given period of time. State of competition is also quite important because it varies from market to market.

The approach is implemented in the private pension savings market of the Baltic region countries – Estonia, Latvia, Lithuania, Poland and Finland. According to the results of the analysis, in the period of 2013 to 2015 the life market potential in Poland will be the most difficult to capture in terms of a number of new customers, which is estimated to be non-existent. The market itself is considered to be quite saturated (i.e. customers-to-active population proportion is 0.5) and its growth potential might come from an increase in an average premium, which is both at the highest relative (i.e. 0.91 out of average monthly salary) and absolute level though (euro 867 per annum). Finally, there is the fiercest competition in the life market of Poland. On the opposite side, the Finnish pension insurance market is expected to show the highest increase in the net number of customers (i.e. 42 th), followed by the Estonian life market (i.e. 28.5 th). The model also says that the Estonian life market has a potential for additional growth in both the average contribution in absolute terms (i.e. euro 130 per annum) and also as a proportion of an average monthly salary (i.e. 0.15). However, its further increase in terms of a number of new customers can be limited because it is already approaching saturation level of Poland (i.e. 0.44 for EE Life vs. 0.50 for PL Life). Meanwhile competition in the Estonian life market is quite favourable to new entrants because of the high concentration. Latvian private pension funds in terms of the market potential should be marginally preferred to Estonian pension funds while Lithuanian pension 3rd pillar funds are estimated to demonstrate the least market growth (i.e. 3.2 th of new customers and no major changes in other indicators) in 2013–2015, which can be a good option for a very long-term strategic investment.

Proposals for further research include enhancement of the market growth and saturation approach by explaining its key indicators by more sophisticated econometric models and elaborating further the analysis of the dynamics of market growth, saturation and competition indicators. Additionally, the market growth, saturation and competition approach can be used also for defining the market potential for other financial products.

References

Banincova, E. (2012). Developments in Banking Sectors of Central and Eastern Europe and Three Baltic States After the Global Financial Crisis and European Debt Crisis, *Kobe University Economic Review*, *58*, 39–59.

Bank of Lithuania. Insurance Activity Results 2008–2012. Available online at http://www.lb.lt retrieved [April 2013].

Beck, T., & Webb, I. (2002). Economic, Demographic and Institutional Determinants of Life Insurance Consumption across Countries, *The World Bank Economic Review*, *17(1)*, 51–88.

Brouthers, K.D. (2002). Institutional, cultural and transaction cost influences on entry mode choice and performance, *Journal of International Business Studies*, *33 (2)*, 203. http://dx.doi.org/10.1057/palgrave.jibs.8491013

Cavusgil, S.T. (1985). Guidelines for export market research, *Business Horizons*, *28 (6),* 27–33. http://dx.doi.org/10.1016/0007-6813(85)90082-5

Enz, R. (2000). The S-Curve Relation Between Per-Capital Income and Insurance Penetration, *The Geneva Papers on Risk and Insurance*, *25, (3)*, 396–406. http://dx.doi.org/10.1111/1468-0440.00072

European Central Bank. (2005). Banking Structures in the New EU Memberstates, January, 2005.

European Investment Bank .(2013). Banking in Central and Eastern Europe and Turkey: Challenges and Opportunities, January, 2013.

Financial and Capital Markets Commission. Insurance Market Indicators 2003–2012. Available online at http://www.fktk.lv [April 2013].

Financial and Capital Markets Commission. Private Pension Fund Operations 2000–2012. Available online at http://www.fktk.lv [April 2013].

Federation of Finnish Financial Services. (2012). Finnish Insurance in 2000–2012. Available online at http://www.fkl.fi [April 2013].

Federation of Finnish Financial Services. (2009). Savings and Life Insurance in Finland. Available online at http://www.fkl.fi [April 2013].

Ferguson, N. (2008). The ascent of money: a financial history of the world. The Penguin Press, New York.

Financial Supervision Authority. Life Insurance Contracts, Contractual Payments, Claims and Liabilities 2002–2012. Available online at http://www.fi.ee [April 2013].

Finasta Asset Management. (2013). Annual reports 2004–2012. Available online at http://www.finasta.com [May 2013].

Fisk, P.R. (1958). Maximum Likelihood Estimation of Törnquist Demand Equations. *The Review of Economic Studies. 26 (1)*, 33–50. Published by: Oxford University Press. http://dx.doi.org/10.2307/2295856

Fujita, M., Krugman, P., & Venables, A. (1999). The Spatial Economy: Cities, Regions, and International Trade. MIT Press, Cambridge.

Harris, C.D. (1954). The market as a factor in the localization of industry in the United States. *Annals of the Association of American Geographers 44*, 315–348.

Hanson, G. (1996). Localization economies, vertical organization, and trade. *American Economic Review 86*, 1266–1278.

Head, K., & Mayer, T. (2004). Market potential and the location of Japanese investment in the European Union. *Review of Economics and Statistics*, forthcoming. http://dx.doi.org/10.1162/0034653043125257

Insurance Europe. (2013). European Insurance in Figures, *Statistics Nr. 46*, 20–21.

Javidan M., & House, R. (2002). Leadership and cultures around the world: findings from GLOBE. An introduction to the special issue. *Journal of World Business 37(1)*, 1–2. http://dx.doi.org/10.1016/S1090-9516(01)00068-2

Kjosevski, J. (2012).The Determinants of Life Insurance Demand In Central and Southeastern Europe, *International Journal of Economics and Finance*, *4 (3*) 237–247. http://dx.doi.org/10.5539/ijef.v4n3p237

Krugman, P. (1980). Scale economies, product differentiation, and the pattern of trade. *American Economic Review 70*, 950–959.

Kubicova, L., & Lušňakova, Z. (2010). Consumer foodstuffs demand and income standard development in the households of Slovakia, *Acta Universitatis Agriculturae Mendelianae Brunensis*, *LVIII*, 99–106.

Latvian Insurers Association. Annual Reports on Gross Written Premia by Life Insurance Companies 2003–2012. Available online at http://www.laa.lv [April 2013].

Liao, S., Chen, Y., & Tseng, Y.(2009). Mining demand chain knowledge of life insurance market for new product development, *Expert Systems with Applications* 36, 9422–9437. http://dx.doi.org/10.1016/j.eswa.2008.12.053

Mollet, A. (2004). First Japanese cards launched in China. *Cards International*.

Morschett, D., Klein H.S., & Swoboda, B. (2010). Decades research on market entry modes: what do we really know about external antecedents of entry mode choice? *Journal of International Management*,*16(1)*, 60–77. http://dx.doi.org/10.1016/j.intman.2009.09.002

Niitamo, O. E. (1968). Alkoholijuomien kulutus ja hinnat (Consumption and Prices of Alcoholic Beverages) by A. Nyberg. *The Swedish Journal of Economics*, *70 (3)*, 178–182. http://dx.doi.org/10.2307/3439311

Nordstrom, K.A. (1991). The Internationalism Process of the Firm: Searching FOR New Patterns and Explanations, *Institute of International Business*, Stockholm.

Papadopolous, N. (1987). Approaches to international market selection for small and medium size enterprises, in Rosson P.J. and Reid, S.D. (Eds), Managing Export Entry and Expansion: Concepts and Practise, Praeger, NewYork, NY, 128, 53.

Papadopoulus, N., & Jansen, D. (1994). Country and method-of-entry selection for international expansion: international distributive arrangements revisited. *Dimensions of International Business*, *11*, 31–52.

Polish Insurance Association. (2013). Life Insurance Market Statistics 2003–2012. Available online at http://www.piu.org.pl [April 2013].

Redding, S., & Venables, A. (2004). Economic geography and international inequality. *Journal of International Economics 62*, 53–82. http://dx.doi.org/10.1016/j.jinteco.2003.07.001

Reid, S. D., & Rosson, P. J. (1987). Managing export entry and expansion: an overview. In Rosson, P.J. and Reid, S.D. (Eds), Managing export and expansion: Concepts and Practise, Praeger, NewYork, NY, 3–18.

Russow, L. C., Okoroafo, S. C. (1996). On the way towards developing a global screening model, *International Marketing Review*, *13(1)*, 46–64. http://dx.doi.org/10.1108/02651339610111344

Saegusa, Y. 1960. Fitting of Tornqvist's demand function. *Nogyosogokenkyu Quarterly J. of agr. Economy* ,14(2), 161–173.

SEB Wealth Management (2013), Annual reports 2004–2012. Available online at http://www.seb.lt/pow/wcp/seblt.asp?lang=en&website=TAB4 [May 2013].

Sinha T. (2005), The Indian Insurance Industry: Challenges and Prospects. Available online at http://<unpan1.un.org/intradoc/groups/public/documents/apcity/unpan025798.pdf [April 2013].

Swedbank Investeerimisfondid AS (2013), Annual reports 2008–2012. Available online at http://www.swedbank.ee/private/investor/funds/funds/hai?language=ENG [May 2013].

Terpstra, V., & Yu, C.M. (1988). Determinants of foreign investment of US advertising agencies, *Journal of International Business Studies*, *19(1)*, 33–46. http://dx.doi.org/10.1057/palgrave.jibs.8490373

The Financial Express. (2010). 18 Foreign banks line up at RBI for India foray. Available online at http://www.thefinancialexpress-bd.com/more.php?news_id=108798&date=2010-08-12 [April 2013].

Törnquist, L. (1941). Review of Work by H. Wold. *Ekonomick Tidshrifr*, *43*, 216–25.

UAB DNB Asset Management. (2013). Annual reports 2004–2012. Available online at http://www.dnb.lt/lt/investiciju-valdymas/pensiju-fondai/type-1/1 [May 2013].

Whitelock, J., & Jobber, D. (2004). An evaluation of external factors in the decision of UK industrial firms to enter a new non-domestic market: an explanatory study, *European Journal of Marketing*, *38, 11/12*, 1437.

World Databank. (2013). Population, Working age population, Average salary. Available online at http://databank.worldbank.org/data/home.aspx [April 2013].

Yoshida, M. (1987). Macro-micro analysis of Japanese manufacturing investments in the United States. *Management International Review*, *27(4),* 19–31.